# Benefits of CI/CD to achieve, build and deploy automation for cloud-based software products

Continuous Integration and Continuous Deployment (CI/CD) is the technical practise used in automating the process of building reliable software products. It is used to integrate, build, test and deploy code automatically from code to production

With CI/CD what you can be able to achieve includes the following:

1. Code review
2. Compile/Lint
3. Integrate
4. Run unit tests
5. Verify dependency security
6. Deploy to test environment
7. Create infrastructure
8. Deploy to production
9. Smoke tests in production
10. Team test
11. Deploy to test environment
12. Smoke test in production
13. Rollbacks
14. Promoting production

| No | Task | Value | Benefits of CI/CD |
|---|---|---|---|
| 1 | Catch compile errors after merge | Reduce cost | Less developer time on issues from new developer code |
| 2 | Catch unit test failures Detect security vulnerability | Avoid costs | Less bugs in production environment Prevent embarrassing or costly holes |
| 3 | Automate infrastructure creation | Avoid cost | Less human error and get to have faster deployments |
| 4 | Automate infrastructure clean-up | Reduce costs | Less infrastructure costs from unused resources |
| 5 | Faster and more frequent production deployments | Increase revenue | New-value-generating features released more quickly |

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| 6 | Deploy to production without manual checks | Increase revenue | Increase revenue due to faster release time to market |
| 7 | Automate smoke tests | Protect revenue | Protect revenue because it reduced downtime from deploy-related crash or major bug |
| 8 | Automated rollback triggered by job failures | Protect revenue | Quick undo to return to production to working state |

In conclusion, with all these benefits listed above, CI/CD will be able to increase overall revenue of the company by reducing downtime of the server and also get to eliminate unnecessary expensive expenses that can be caused by human errors during the lifecycle of the software development.